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Predicting success of students in a physical education college.

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Thesis

PREDICTING SUCCESS OF STUDENTS IN A PHYSICAL EDUCATION COLLEGE

Submitted by

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CHAPTER I

INTRODUCTION

The Problem

The selection of well-qualified students for admission into professional schools of physical education is a difficult but important task for administrators. Adequate academic background and preparation, and physical ability to participate in activities necessary for teaching are basic for admission. Previous educational record and objective test scores are always considered as part of the prospective students' qualifications. However, there is other information not so easily obtainable as that previously mentioned to be considered by the admission officers. The candidates should not only show a desire to teach and an interest in physical education, but if they are to succeed, they must have commensurate personality traits which are often hard to determine.

Teaching requires a face-to-face relationship not only with the children to be taught, but with supervisors, principals, other teachers and parents. Many times there is no objective attempt to determine personality traits which seem important in the professional life of future teachers. An emotionally well-adjusted candidate is important not only to the future of the student, but to the success of the school itself.

When girls are admitted to schools of physical education, it is often impossible to have thorough, adequate background data. What information there might be would come from subjective ratings by former teachers. Pre-enrollment interviews are also important, but sometimes students are not seen previous to the first day of school.

However, the unreliability of these procedures has been adequately demonstrated to the detriment of both the student and the school concerned. McNeeley,[1/] Rodney,[2/] and Hanna[3/] are among those who are concerned about this educational waste and inefficiency.

The Purpose of the Problem

Directors of admission of professional schools are continually reviewing the qualifications of prospective candidates, and, in the light of an accepted criterion of success, are trying to predict which candidates at their particular school will succeed. Since there is still no adequate objective method for predicting proficiency after graduation, the criteria most often used are the grades achieved in school.

Some opinions on the use of grades as a criteria for prediction are:

1/ John McNeeley, "College Student Mortality," U.S. Office of Education Bulletin, 1937, 11:1-112.

2/ Rodney M. West, "Student Mortality, Student Survival, and Student Discontinuing," Problems in College Education, Univ. of Minneapolis Press, Minneapolis, Minn., 1928, pp. 199-299.

3/ Joseph V. Hanna, "Student Retention in Junior Colleges," Journal of Educational Research, 1930, 22:1-8.

"Studies on the prediction of academic success have usually attempted to predict grades and have assumed that grades measure the undefined outcomes of the educational process." 1/

"There is much wisdom in using the criterion of scholastic success which Thurstone has frequently used, namely, graduation...." 2/

"Studies of prediction at the college level have been primarily concerned with the prediction of academic achievement. College grades or achievement test scores have usually been used to measure this." 3/

The purpose of this thesis is to study the relationship, if any, between marks in school and a personality inventory along with a personal information record.* Ultimately, if the results are significant, these tests might be used as added data for admission.

Statement of the Problem

This study proposes to determine the relationship between college scholarship and certain personality traits, physical complaints, high-school grades, SAT results and extra-curricular activities. What relationship exists between success in college and the following:

1/ Robert M. W. Travers, "Significant Research on the Prediction of Academic Success," The Measurement of Student Adjustment and Achievement, University of Michigan Press, Ann Arbor, 1949, p. 175.

2/ Ibid., p. 165.

3/ Ralph F. Berdie, "Prediction of College Achievement and Satisfaction," Journal of Applied Psychology, 28, June, 1944, p. 239.

*/ The one used in this study is an inventory of psychosomatic conditions.

1. Inventory of Factors S T D C R?
2. Guilford-Martin Inventory of Factors G A M I N?
3. Guilford-Martin Personnel Inventory?
4. The results of teachers' ratings on the three Guilford-Martin Inventories?
5. The results of the Personal Information Record?
6. Previous high-school academic records?
7. Scholastic Aptitude Tests results?
8. Extra-curricular activities?

Background of the Problem

Whoever endeavors to study predictions in any field soon becomes aware of the present limited research data. Consequently few, if any, final and complete answers have been found to many pertinent questions. For example, conflicting reports on the use of personal inventory tests show that few general laws or principles have been established. This would indicate that there is need for intensive cooperative research on predictive problems.

A review of the studies in the literature shows that there are a number of methods attempting to predict success in college. It has been recognized that no one single criterion is adequate for prediction.[1/] The traditional criteria have been on the intellectual level. Use of intelligence tests, scholastic aptitude tests, and previous academic records have been

1/ F. S. Freeman, "Predicting Academic Survival," Journal of Educational Research, 23:123, Feb. 1931.

used most widely. One example of this theory was reported by Glenn W. Durflinger,[1/] who thinks a high correlation is usually found using the combination of "an intelligence test, a good achievement test and high school grade averages." School records, although of considerable value, are still far from adequate for predicting purposes[2/] when used alone.

As may be seen by the literature, many of the published studies have been concerned with intellectual factors.[3/] Personal qualifications of students, their ability to become oriented to college life, and their motivation to enter a professional field are but a few of the factors which have received far less study than their importance deserves.

Naturally, research in the area of personality, interest, and motivation is difficult and often disappointing, but if prediction in these fields is to be improved, research in this area must be persistent. Investigations show that marks in professional schools fail to predict accurately later success.[4/]

At the same time it would be an error to assume that be-

1/ Glenn W. Durflinger, "The Prediction of College Success--A Summary of Recent Findings," Journal of the American Association of College Registrars, 19:68-70, Oct. 1943.

2/ Everett M. Woodman, "Construction of a Measurement of Certain Non-intellectual Determinants of Academic Success in College," Unpublished Doctor's Dissertation, School of Education, Boston University, 1949, p. 11.

3/ Dewey B. Suit (chairman), Predicting Success in Professional Schools, A. C. E., Washington, 1949, pp. 138-165.

4/ Ibid., p. 5.

[illegible] [illegible]. The [illegible] of this theory has [illegible] by [illegible] [1]. Intelligence, who claims a high correlation is usually found using the [illegible] of the intelligence test, is good scholarship but not good school students.[illegible] Social [illegible], students of [illegible] ability, are still far from adequate for predicting personal [illegible] success alone.

It is to seem by the literature, many of the traditional studies have been concerned with intellectual factors.[2] Personal qualifications of students, their ability to think oriented to making life, and their motivation to undertake a professional field are but a few of the factors which have relative to the least study and, yet important elements.

Seriously, research in the area of personality, interest, and motivation is difficult and often disappointing. But if prediction in these fields is to be improved, research in this area must be prioritized. Generalizations are that work in professional schools that is partial increasingly later success.[3]

It has been like it would be an error to assume that be-

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[1] Glenn F. Ludlum, Jr. "The prediction of college success—a summary of recent research," Journal of the American Association of Collegiate Registrars. 12(2-3), Oct. 1937.

[2] Harold T. Sprague, "Continuation of a longitudinal of Lyman-Lorrainecional correlates of teaching success in Illinois," Illinois Academy of Teacher Education, Journal of Education, Boston University, 1957, p. 12.

[3] Larry R. Wolf (Unknown), Predicting success in professional schools, p. 7. Washington, (1967), pp. 12-17.

[4] Ibid., p. 6.

cause research in the nonintellectual fields is still in the experimental stage, attempted studies in that area have no value.

Some of the nonintellectual factors under consideration in current studies are attitudes, traits, interests, and motivation as predictive indices. Self-evaluation tests have been made in the fields of interest, personality, and health, for example.

Gabriel Elias [1/] suggested that despite the admitted inadequacies of self-rating questionnaires, the test answers are reflections rather than direct measures of personality. This would seem to indicate that as yet the personality inventories are not adequate by themselves as predictors, and that there is need for further research.

The only study found on the psychosomatic approach to the problem was the "Cornell Medical Index--Health Questionnaire III. This study was made in a hospital situation, but the authors believed it could be useful "for assessing the student's emotions in relation to his medical status, scholastic behavior and potentialities." [2/] Travers sums up the present situation in

1/ Gabriel Elias, "Self evaluative Questionnaires as Projective Measures of Personality," Journal of Clinical Psychology, 15: 496-500, Dec. 1951.

2/ Keeve Brodman, M.D., Albert I. Erdmann, Jr., M.D., Irving Lorge, Ph.D., Charles P. Gershenson, Ph.D., and Harold G. Wolff, M.C., "The Cornell Medical Index--Health Questionnaire III-The Evaluation of Emotional Disturbances," Journal of Clinical Psychology, Vol. viii, No. 2, April 1952, p. 123.

social research in the sociohistorical right. It will be the [illegible] study, effective studies in that area have not [illegible].

Some of the sociohistorical factors under consideration in current studies are [illegible], [illegible], [illegible], and [illegible] in predicting success. Self-evaluation tests are used as the fields of interest, personality, and [illegible], [illegible].

Terman [illegible][1] suggested that besides the obvious inadequacies of self-rating questionnaires, the test scores are relatively [illegible] measures of personality. This would seem to indicate that as yet the personality inventories are not adequate by themselves as predictors, and that more is need for further research.

The only study found on the psychosocial approach to the problem was the Cornell Medical Index--Health Questionnaire. The study was made in a medical clinic, but the authors believed it could be useful for assessing the student's adjustment in relation to his medical status, academic behavior and irregularities.[2] Interest must be the present direction of

[1] Lewis Terman, "Self evaluation questionnaires as criterion measures of personality," Journal of clinical psychology, 11: [illegible], 1955, 1951.

[2] Harry Brown, J.J. Alvarez, [illegible], [illegible], and Donald O. Wolff, [illegible], "The Cornell Medical Index-Health Questionnaire as an aid in medical [illegible]," Journal of clinical psychology, vol. xviii, no. 2, April 1962, p. 124.

regard to predicting success very well when he says,

> "Educational counselors have tended to underestimate the importance of...nonintellectual factors and too often have placed excessive reliance on standard measures of scholastic aptitude. Academic counselors in universities and colleges must give greater recognition to the nonintellectual factors which contribute to academic success." 1/

1/ Robert M. W. Travers, op. cit., p. 174.

CHAPTER II

PROCEDURE

Population

This study was carried out in the Bouvé-Boston School of Physical Education, affiliated with Tufts College, Medford, Massachusetts. This school offers a four-year course in either physical education or physical therapy leading to a diploma from the school, and to a B.S. degree from Tufts College.

The students attending are generally recruited from public and private schools in the eastern region of the United States. Most of the graduates in physical education find positions in colleges and private schools throughout the country.

For this study, the students selected were freshmen and sophomores. There were thirty-five freshmen undecided in their future programs, and forty sophomores majoring in physical education.

The freshmen ranged in age from eighteen years, two months, to twenty-nine years, eight months. The median age was nineteen years, one month. The sophomores ranged from eighteen years to twenty-four years, with the median age twenty years, one month.

Instruments Used

Four instruments of measurement were administered: J. P. Guilford's An Inventory of Factors S T D C R, The Guilford-Martin Inventory of Factors G A M I N (abridged edition), The Guilford-Martin Personnel Inventory, and The Personal Information Record originated by Mr. Arthur Littlefield and revised by Dr. John V. Gilmore and Dr. Herbert Harris. All tests were personally administered to each class separately in four 45-minute sessions during the week of June 18, 1950.

Records Used

The academic background of the students was taken from the Bouvé-Boston School admittance records, which were supplied to them in turn by the high-school principals. These records included subject matter grades, and mental test scores. The Scholastic Aptitude Test results were also found in the students' record folders. The cumulative record supplied the grades for the time the students attended college. The freshmen marks included one complete year of study, while the sophomore grades included the complete record of the first two years. Both academic and non-academic grades were averaged together to give the final mark used for the study.

Other Data

To determine the basis for the teachers' rating on the Guilford-Martin Inventories, five teachers on the faculty rated each student on the basis of five points on the thirteen fac-

Instruments Used

Four instruments of measurement were administered: 1. F. Matlovich's *An Inventory of Factors of I.Q.*, The *Wellingtonian Inventory of Factors of I.Q.* (Wellington), The *Multi-Dimensional Personal Inventory*, and The *Personal Information Record* developed by Mr. Arthur Lightfoot and revised by Dr. John V. Gilmore and Dr. Edward Dawson. All tests were personally administered to each class individually in four 45-minute sessions during the week of June 5, 1970.

Methods Used

The academic background of the students was taken from the course-taken school statistics records, which were supplied by them in turn to the high-school principals. These records included end-of-year grades, and normal test scores. The scholastic aptitude test results were also found in the students' record folders. The counsellors records supplied the grades for the five the students which had sufficient. The intelligence factor included the complete four of study, while the economic factor included the complete record of the first two years. Both academic and non-academic grades were averaged together to give the final score used for the study.

Other Data

To determine the goals for the research relying on the institutional-wide measures, five questions on the faculty rated each student on the goals of five points on the Dutchman Ter-

tors on the inventories.

As a means of evaluating the extra-curricular activities, the point system, designed by the School Government Committee to weigh the importance of each elected office, was used. A complete list of the positions and point rating is included in the Appendix at the conclusion of this study. This list also includes five other items which, although not elected offices, carried some responsibility and required a definite amount of the student's time during the school year.

Statistical Procedure

To show the relationship between the data measured by this study, product-moment coefficient of correlation were calculated for the following:

College grades and Guilford-Martin Inventories

College grades and teachers' rating on the Guilford-Martin Inventories

College grades and Personal Information Record

College grades and high-school grades

College grades and Scholastic Aptitude Test

College grades and extra-curricular activities.

A scatter-diagram [1/] and a correlation table [2/] were set up for each correlation, deviations were taken from assumed means

1/ E. F. Lindquist, A First Course in Statistics, Houghton Mifflin Company, Boston, 1938, p. 139.

2/ Ibid., p. 153.

and a coefficient of correlation was calculated by the Pearson product-moment correlation coefficient formula.[1/]

The standard error of each correlation was computed in order to determine their reliability.[2/]

The individual responses on the Personal Information Record were weighted from one point to five points based upon estimates made at M.I.T.[3/] For example, some complaints rating five points were: asthma, peptic ulcer, and migraine headaches; four points, underweight, intense hunger, and overweight; three points, sinus trouble, colds (more than two per year), and low back pains; two points, hemmorhoids, hives, and laryngitis; one point, rheumatic fever, sciatica, and cold sores. For a complete list, refer to the Appendix.

An average grade was made of all the subjects studied in high school. In college, the marks of both academic and non-academic courses were included in the average. The freshmen's averages included one year's work, and the sophomore grades were based upon the completed work of two years' study.

1/ Ibid., p. 151.

$$r = \frac{\frac{\Sigma x^1 y^1}{N} - \left(\frac{\Sigma x^1}{N}\right)\left(\frac{\Sigma y^1}{N}\right)}{\sigma x \cdot \sigma y}$$

2/ Truman Lee Kelley, Fundamentals of Statistics, Harvard University Press, Cambridge, 1949, p. 360.

$$r = \frac{1-r^2}{\sqrt{N-2}}$$

3/ Members of Medical Department of M.I.T.: Dr. H. I. Harris, Dr. D. L. Farnsworth, Dr. E. Cole, Dr. C. Boghstose, Dr. J. Gill.

Definition of Terms

For the sake of clarity the following terms are explained:

Personality: "The integrated organization of all the cognitive, affective, conative, and physical characteristics of an individual as it manifests itself in focal distinctness to others." 1/

Factor analysis: "A technique for analyzing the pattern of relationships among a set of variables, as shown by the intercorrelations of the variables, into a number of independent components of factors." 2/

Personality test: An instrument purporting to measure certain personality traits.

Trait: A quality of character.

Psychosomatic: "pertaining to bodily symptoms which arise from mental states." 3/

1/ Howard C. Warren (Editor), Dictionary of Psychology, Houghton Mifflin Company, Cambridge, 1934, p. 197.

2/ Robert L. Thorndike, Personnel Selection, John Wiley and Sons, Inc., New York, 1949, p. 30.

3/ Howard C. Warren, op. cit., p. 218.

CHAPTER III

PRESENTATION AND INTERPRETATION OF DATA

The data collected are arranged in tables for easiest reference and interpretation.

College Grades and Factors STDCR

This instrument measures separately five personality traits that J. P. Guilford found by factor analysis to be components in inventories purporting to measure introversion-extroversion. Strictly speaking, only factors S, T, and R belong in this category, according to the author of the test. Factors D and C are more appropriately designated as emotionality factors. The traits are: S - Social introversion-extroversion, T - Thinking introversion-extroversion, D - Depression, C - Cycloid disposition, and R - Rhathymia.[1/]

As Table 1 shows, there is much difference between the correlations of the freshmen and those of the sophomores.

According to the freshmen results, it would seem that a student with high academic standing would have tendencies to be shy in social situations, to be meditative, reflective, or philosophical in thinking, to be pessimistic, and "blue" with

1/ J. P. Guilford, Manual of Directions and Norms (revised edition), Sheridan Supply Company, P. O. Box 837, Beverly Hills, California.

feelings of guilt, to be fluctuating in mood, and to be serious-minded, self-controlled and self-restrained.

Table 1. Coefficient of Correlation for College Grades and Factors Social, Thinking, Depression, Cycloid, Rhathymia on Guilford-Martin Inventory

Factors on Guilford-Martin Inventory	College Grades	
	Freshmen	Sophomores
Social		
r	-.43	.06
σr	.14	.16
CR	3.07	.375
Thinking		
r	-.58	.04
σr	.12	.16
CR	4.83	.250
Depression		
r	-.42	.09
σr	.14	.16
CR	3.00	.56
Cycloid		
r	-.31	.08
σr	.16	.16
CR	1.87	.50
Rhathymia		
r	-.37	-.22
σr	.15	.15
CR	2.46	1.47

The sophomores are inclined toward less introversion, with the exception of the last trait. This introversion might be the result of a greater self-understanding, therefore better adjustment to situations. One wonders whether the tone of the school, and the training of the girls might not influence the

impulsiveness and liveliness of the students attending. The results of this inventory seem to coincide with the observation that students with high academic standing are more introvert than extrovert.

Since grades and personality traits are not too closely related, one would not expect to find "high" correlation, but this does not necessarily mean that there is no relationship, nor that the correlation is insignificant.

College Grades and Factors GAMIN

This instrument, based upon factor-analysis evidence, measures traits of dynamic and aggressive type as well as those showing self-confidence and self-assurance.

The results of this test, as shown in Table 2, would indicate that the freshmen with high academic standing would show the following tendencies: a disinclination towards vigorous and quick muscular activity, a passive or inconspicuous role in social situations, a slight emotional toughness rather than emotional sensitivity or refinement, a feeling of inadequacy and self-depreciation, and a calm, relaxed composure.

In contrast, the sophomores show a tendency toward muscular activity, more feelings of self-confidence, but slightly less calmness than the freshmen. Both groups had similar ratings in the masculine-feminine factor.

One would expect that the sophomores would show more composure than the freshmen. One explanation for this contrary

Table 2. Coefficient of Correlation for College Grades and Factors General Activity, Ascendance-Submission, Masculinity-Femininity, Inferiority, Nervousness on Guilford-Martin Inventory

Factors on Guilford-Martin Inventory	College Grades	
	Freshmen	Sophomores
General Activity		
r	-.25	.05
σr	.16	.16
CR	1.56	.312
Ascendance-Submission		
r	-.27	-.22
σr	.16	.16
CR	1.68	1.40
Masculinity-Femininity		
r	.14	.14
σr	.17	.17
CR	.82	.872
Inferiority feelings		
r	-.20	.04
σr	.17	.16
CR	1.17	.250
Nervousness		
r	.12	.06
σr	.15	.16
CR	.80	.375

finding may be that at the time of testing, the sophomores were in the process of preparing a banquet and the final events of camp, and that the students with high academic standing were carrying a great number of responsibilities.

College Grades and Personnel Inventory

Although this inventory was designed to detect the po-

[illegible]

tentially maladjusted (those who are over-critical, over-belligerent, or over-sensitive), it can also be used to evaluate students who are fair-minded, amiable, and tolerant.

Table 3. Coefficient of Correlation for College Grades and Guilford-Martin Personal Inventory Factors of Objectivity, Agreeableness, Cooperativeness.

Factors on Guilford-Martin Inventory	College Grades	
	Freshmen	Sophomores
Objectivity		
r	-.50	.12
σr	.13	.16
CR	3.84	.750
Agreeableness		
r	.12	.14
σr	.17	.16
CR	.705	.872
Cooperativeness		
r	.007	.07
σr	.11	.11
CR	.063	.636

According to Table 3, it would seem that the academically high freshmen tend to be hypersensitive and compliant. However, there seems to be little relationship between cooperativeness and high marks.

College Grades and Teachers' Ratings on Guilford-Martin

In making a comparison of the teachers' rating of the students on the Guilford-Martin Inventories, with the freshmen rating themselves on the same test, it is interesting to note

[illegible]

[illegible]

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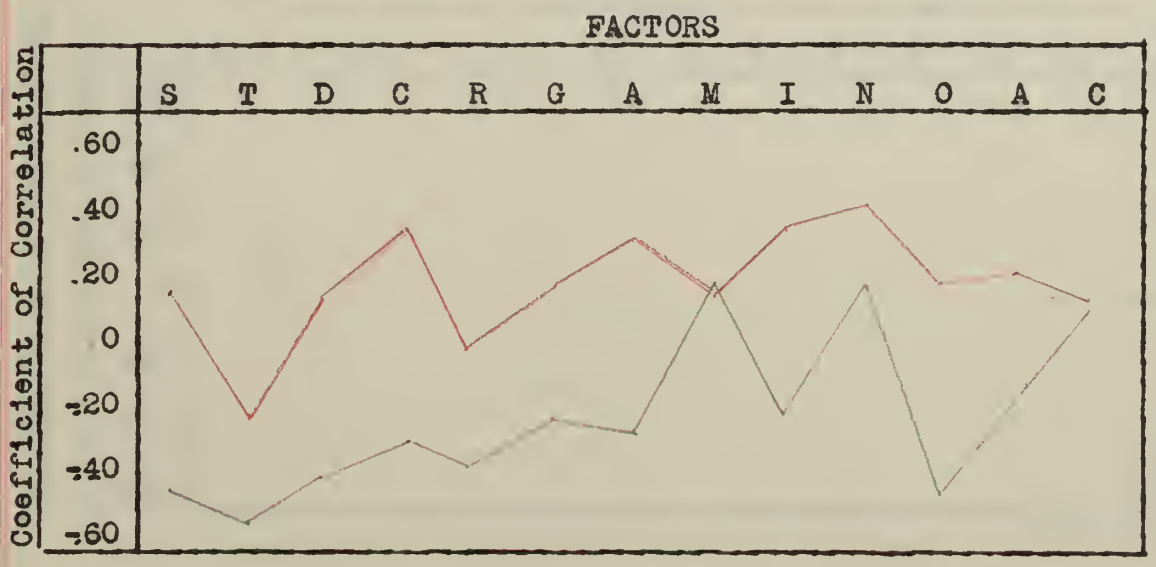
Graph 1.

Coefficient of Correlation of
Guilford-Martin

Freshmen Rating Themselves and Teachers' Rating
of Freshmen on the Guilford-Martin Inventories



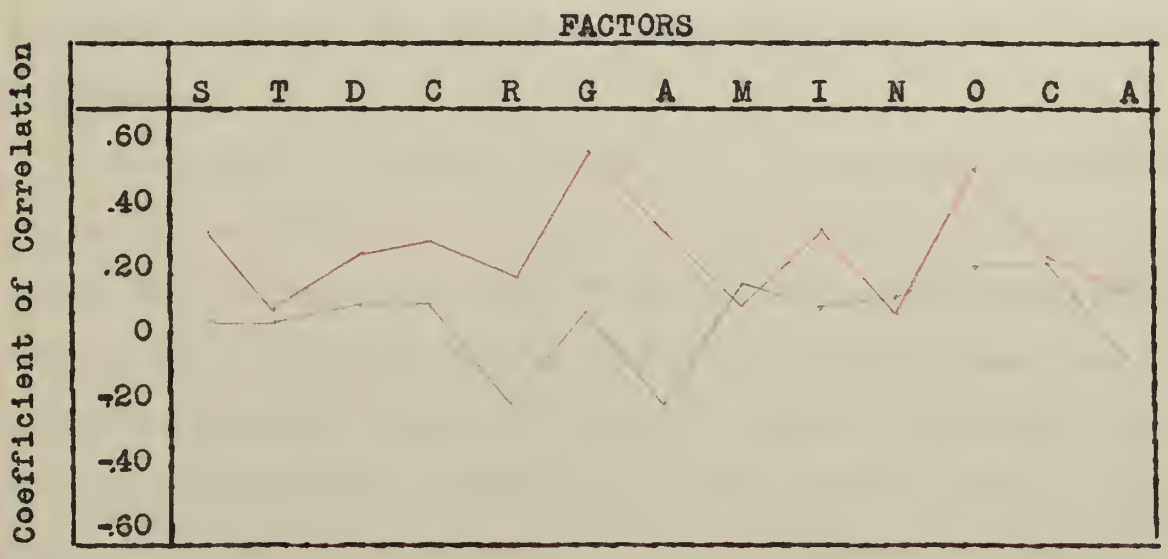
— Freshmen rating on Guilford-Martin

— Teachers' Rating of Freshmen on test

Graph 2.

Coefficient of Correlation of
Guilford-Martin

Sophomores Rating Themselves and Teachers' Rating
of Sophomores on the Guilford-Martin Inventories



— Sophomore rating on Guilford-Martin

— Teachers' Rating of Sophomores on Test

that the majority of the ratings by the teachers were higher than that of the students. In general, the trend was similar, with the exception of the M factor, where the students rated themselves higher than the teachers did.

The sophomore and teachers' ratings do not agree. The G and A factors were quite far apart, as was the O factor. It would seem that the teachers observed more general activity, more social leadership than expressed by the students themselves, as Table 4 shows. The teachers were slightly low on the M and N factors.

There may be several reasons for the difference between the teachers' and students' ratings. Usually most first-year students feel insecure and tend to underrate their own abilities. The teachers have less chance to observe the freshmen, and therefore may rate them more highly. Another possibility may be that the teachers, having graded the pupils in academic work, may be influenced by this mark. In the sophomore year the teachers have had more time to observe the students and therefore may be able to judge more accurately. Since many factors are difficult to determine by observation, it is not unusual to find differences in opinion.

Table 4. Coefficient of Correlation for Teachers' Rating of Freshmen and Sophomores on the Guilford-Martin Inventories, and the Results of the Freshmen and Sophomores Rating Themselves

Teacher's Rating on:	Social			Thinking			Depression			Cycloid			Rhathymia		
	r	σr	CR	r	σr	CR	r	σr	CR	r	σr	CR	r	σr	CR
Freshmen	.11	.17	.647	-.22	.17	1.29	.10	.17	.588	.34	.15	2.25	.06	.17	.352
Sophomores	.32	.14	.647	.08	.16	.50	.21	.16	1.31	.25	.15	1.66	.17	.16	1.06

Teacher's Rating on:	General Activity			Ascendance-Submission			Masculinity-Femininity			Inferiority Feelings			Nervousness		
	r	σr	CR	r	σr	CR	r	σr	CR	r	σr	CR	r	σr	CR
Freshmen	.23	.17	1.35	.29	.16	1.81	.10	.17	.588	.34	.15	2.26	.42	.14	3.00
Sophomores	.56	.11	5.09	.34	.14	2.43	.10	.17	.588	.33	.14	2.35	.003	.16	.018

Teacher's Rating on:	Objectivity			Agreeableness			Cooperativeness		
	r	σr	CR	r	σr	CR	r	σr	CR
Freshmen	.20	.17	1.17	.23	.16	1.43	.18	.17	1.05
Sophomores	.50	.12	4.16	.15	.16	.937	.10	.16	.624

College Grades and Personal Information Record

The results of this correlation denote an indifferent or negligible relationship, as shown in Table 5, particularly for the sophomores. One may assume from this study that there is very little predictive value in using the Personal Information Record as an instrument except for individual counseling. Since this study was started, a more refined inventory has been devised.

Table 5. Coefficient of Correlation for College Grades and Personal Information Record

College Grades	Personal Information Record
Freshmen	
r	.075
σr	.17
CR	.411
Sophomores	
r	.00024
σr	.16
CR	.001

College Grades and High School Grades

This correlation was calculated to determine the relationship between college grades and high-school grades. The average college grades were computed from all marks, both academic and non-academic for the freshmen, and first two years for the sophomores. The correlation, as seen in Table 6, was lower than the median of .51 found in a compilation of individual studies

in this field found in Predicting Success in Professional Schools.[1/]

Table 6. Coefficient of Correlation for College Grades and High School Grades.

College Grades	High School Grades
Freshmen	
r	.40
σr	.15
CR	2.66
Sophomores	
r	.38
σr	.14
CR	2.71

One reason why the correlation is lower than expected may be due to the fact that practical as well as theoretical marks are included in the college averages. Also the students study a greater number and variety of subjects in physical education schools than in high school because physical activities as well as academic subjects are included.

It should be noted that the sophomore correlation of .38 is similar to the median found in the study previously mentioned. The conclusion was drawn that "the quality of high school work will probably have less predictive value in forecasting how well an individual will perform on the higher level."[2/]

1/ Dewey B. Suit, op. cit., p. 143.

2/ Ibid., p. 145.

College Grades and SAT

If the results of this study, Table 7, are compared with the data previously mentioned,[1/] it will be noted that the median of .44 is somewhat lower than .50 in their findings. The sophomore correlation of .17 was far below the median of .40 at the upper-level achievement.

Table 7. Coefficient of Correlation for College Grades and SAT.

College Grades	SAT
Freshmen	
r	.44
σr	.15
CR	2.66
Sophomores	
r	.17
σr	.16
CR	1.06

In a study by Archibald MacIntosh it was found that in women's colleges under 1,000 the correlation was .452 for first-year students.[2/]

College Grades and Extra-Curricular Activities

In observing the relationship between college grades and extra-curricular activities, it would seem that the relationship

1/ Idem.

2/ Archibald MacIntosh, Behind the Academic Curtain, Harper & Bros., New York, 1948, p. 65.

between college grades and extra-curricular activities, Table 8, shows that the results at the sophomore level are fairly close, while for the first year the relationship is less related. This may reflect a feeling of insecurity by freshmen, and perhaps the desire to concentrate on their academic program. Also there are fewer high point offices open to the first-year students.

Table 8. Coefficient of Correlation for College Grades and Extra-curricular Activities.

College Grades	Extra-curricular Activities
Freshmen	
r	.18
ór	.17
CR	1.05
Sophomores	
r	.50
ór	.12
CR	4.19

CHAPTER IV

SUMMARY AND CONCLUSIONS

This study was undertaken to discover if there are other ways of increasing the accuracy in predicting success in a professional school of physical education.

In order to test this, a student's success in college, measured by grades, was compared with certain personality traits, psychosomatic symptoms, previous high-school records, Scholastic Aptitude Tests, and extra-curricular activities.

Five different measurements were made: Inventory of Factors STDCR, Guilford-Martin Inventory of Factors GAMIN, Guilford-Martin Personnel Inventory, teachers' ratings on similar factors found in the above inventories, and Personal Information Record. Also the following data was used: previous high-school marks, the results of Scholastic Aptitude Tests, and the extra-curricular activities. The population was thirty-five freshmen and forty sophomore students at the Bouvé-Boston School of Physical Education.

A summary of this study shows the following:

1. Of the thirty-six traits investigated for the freshmen and sophomores combined, only factors S, T, D and O for freshmen on the Guilford-Martin Inventories were significantly related to scholarship. This result is similar in part to the

findings of Dr. Harris.[1/]

Although this result seems at first glance very disappointing, inventory scores are objective data and probably represent the student's feelings more accurately than any which could be obtained from the usual pre-enrollment interview.

The inventories could be used as an excellent basis for later interviews. For example, very low scores are usually reliable signs that some maladjustment needs attention and once rapport has been established, the students would probably be willing to discuss their problems.

2. The teachers' estimates on the inventory factors related more closely with scholarship in most cases than those of the students. This may show underestimation, successful camouflage on the part of the students, or poor reliability in the subjective judgment of the factors by the teachers.

3. There seems to be little relationship between success in college and the number or severity of psychosomatic complaints* as measured at this time.

4. The correlation obtained for college grades and high-school grades just came within the range found in the report of over twenty independent studies.[2/]

1/ Daniel Harris, "Factors Affecting College Grades: A Review of the Literature 1930-1937," Psychological Bulletin, Vol. 37, no. 3, March 1940, p. 130.

2/ Dewey B. Suit, op. cit., p. 143.

* As defined in this paper.

5. SAT and college grades for freshmen were nearer the median of thirty-five independent studies [1/] than was the correlation for the sophomores.

6. There seems to be a fair amount of relationship between academic success of sophomores and extra-curricular activities, but this was not true of the freshmen.

Limitations

Several limitations exist in this study:

1. A study of this kind would possibly have more significance if the population were larger.

2. No matter how objective teachers try to make their marks, there is always a possibility of error, especially in grading physical activities.

3. No allowance was made in determining the extra-curricular activities score for the students whose time was limited because of after-school employment. Also, commuters have less opportunity to become known and therefore may not be elected to offices in the organizations.

4. It would have been more advantageous to have administered the inventories to the students in smaller groups, although the cooperation and interest was excellent.

5. Self-inventories are always subject to certain limitations:

a. No matter how cooperative the students may

1/ Dewey B. Suit, op. cit., p. 145.

[illegible]

be, there is always a chance that the answers may be clouded. Conscious or unconscious faking is a possibility to be considered.

b. Self-inventories also may be colored by the mood of the examinee at the time of the test.

c. The chance of misinterpretation or ignorance of the vocabulary on the student's part may be a limiting factor to a successful response.

6. The Personal Information Record has been revised since this study was made. The addition of spaces for checking specific age periods when the complaint was noticed may give added greater significance to the response.

Suggestions for Further Studies

As a result of studying this topic, a number of areas for further research are suggested:

1. The Guilford-Martin Inventories could be given to a number of other groups:

a. recent graduates who are in teaching positions to see whether there is any relationship between successful completion of the course, and certain personality traits.

b. third- and fourth-year students in physical education to see whether there would be a lower or higher correlation than was found in this study.

c. students in professional schools other than physical education.

d. students in other professional schools to study the profile of their personality traits.

2. A study might be made of a retest of the Guilford-Martin Inventories, given a year or more later, to see if there are significant changes with maturity.

3. The Guilford-Martin Inventories could be studied in correlations with other criteria of success, such as proficiency of teaching (if a suitable instrument could be found to test this).

4. A study of the Guilford-Martin Inventories correlated with other nonintellectual factors than extra-curricular activities.

5. A revision of the Personal Information Record to insure more adequate response and interpretation.

6. Administer a revised Personal Information Record to:

a. a different population, one that is not so healthy because of fewer opportunities for emotional outlets.

b. students in professional schools other than physical education.

c. students in graduate schools.

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APPENDIX A

BOUVÉ-BOSTON SCHOOL OF PHYSICAL EDUCATION

[redacted]
MEDFORD 55, MASSACHUSETTS
In affiliation with Tufts College

ACADEMIC RECORD IN SECONDARY SCHOOL OR COLLEGE

This is to certify that.....

of.....
(number and street) (city) (state)

who was born.....19.....at.....(city).....(state)

attended the.....
(give name Secondary School or College)

from.....19....., to.....19.....and was graduated.....

Below is a correct statement of her record.

Signed by.....

Dated.....19..... Official position.....

SUBJECTS	Year Taken (1,2,3,4,)	No. of Weeks Pursued	No. of Periods per Week	Grade	Units Credit	SUBJECTS	Taken Year (1,2,3,4,)	No. of Weeks Pursued	No. of Periods per Week	Grade	Units Credit
English—First Year						Mathematics					
Second Year						Elementary Algebra					
Third Year						Advanced Algebra					
Fourth Year						Plane Geometry					
Latin—First Year						Solid Geometry					
Second Year						Science—Physics					
Third Year						Chemistry					
Fourth Year						Biology					
French—First Year						General Science					
Second Year						Physiology					
Third Year						Bookkeeping—First Year					
Fourth Year						Second Year					
German—First Year						Shorthand—First Year					
Second Year						Second Year					
Third Year						Typewriting—First Year					
Fourth Year						Second Year					
Spanish—First Year						Clothing					
Second Year						Foods					
Third Year						Home Management					
Fourth Year						Music					
History—Ancient						Other Subjects					
English											
General											
United States											
Mediaeval and Modern											
Civics											
Economics											
Sociology						Total Credits					

In a class of.....members, she is in the highest, second, third, lowest quartile.
(check the correct term)

Mental Tests Taken in School	Date	Point Score	I.Q.

Passing grade in school.....Number of units of credit required for graduation.....Length of recitation period.....

Did this pupil ever fail in any subject?.....If so what subject? (Give name of subject, length of time pursued, and failing grade)

.....

Explanation of grading system if figures are not used.....

Grade required for certification to college.....

Personality Record

(Confidential)

The following characterizations are descriptions of behavior; they are not ratings. It is recommended that where possible the judgments of a number of the pupil's present teachers be indicated by use of the following method:

Example: SERIOUSNESS OF PURPOSE		1	M (5)		2
	Purposeless	Vacillating	Potential	Limited	Purposeful

M (5) indicates the most common or modal behavior of the pupil as shown by the agreement of five of the eight teachers reporting. The location of the numerals to the left and right indicates that one teacher considers the pupil *vacillating* and that two teachers consider him *purposeful*. If preferred the subject fields or other areas of relationship with the pupil may be used to replace the numerals.

1. SERIOUSNESS OF PURPOSE	Purposeless	Vacillating	Potential	Limited	Purposeful
2. INDUSTRY	Seldom works even under pressure	Needs constant pressure	Needs occasional prodding	Prepares assigned work	Seeks additional work
3. INITIATIVE	Seldom initiates	Conforms	Varies with conditions	Self-reliant	Actively creative
4. INFLUENCE	Passive	Retiring but co-operative	Varying	Contributing	Strongly controlling
5. CONCERN FOR OTHERS	Antisocial	Indifferent	Self-centered	Somewhat socially concerned	Deeply and generally concerned
6. RESPONSIBILITY	Unreliable	Somewhat dependable	Usually dependable	Conscientious	Assumes much responsibility
7. EMOTIONAL STABILITY	Hyperemotional	Excitable	Usually well-balanced	Well-balanced	Exceptionally stable
	Apathetic	Unresponsive			

Information under the following headings is extremely important to the Admissions Committee and should be given as fully as possible.

Significant school activities:

Special interests or abilities:

Significant limitations (physical, social, mental):

Additional information which may be helpful, such as probable financial needs or work experience:

Principal's recommendation (Specific statement concerning the applicant's fitness for acceptance):

Date..... Signature..... Title.....

BOUVÉ-BOSTON SCHOOL OF PHYSICAL EDUCATION

Name Address Born

Degree

Diploma

Withdrew

Reason

Parent (Guardian) Address

Entered From (School or Col.) Date

THEORY	19 to 19			19 to 19			19 to 19			19 to 19		
	Sem. I	Sem. II	Hours	Sem. I	Sem. II	Hours	Sem. I	Sem. II	Hours	Sem. I	Sem. II	Hours
Anatomy I (Kinetic)												
Anatomy II, Applied												
Anatomy II, Visceral												
Anatomy II, Physical Therapy												
Biology												
Child Growth and Development												
Clinic												
Current Problems in Phys. Ed.												
Dance Theory												
Directed Teaching												
Dramatics												
Education I												
Education II												
English												
First Aid												
Health & Safety Education												
History & Philosophy of the Dance												
History & Political Institutions of the U.S.												
Hygiene												
Introduction to Phys. Ed.												
Introduction to the Arts												
Massage												
Music in Relation to Dance												
Organization & Administration												
Orientation												
Physiology												
Preventive & Corrective Phys. Ed.												
Principles of Teaching												
Psychology, Child												
Psychology, Educational												
Psychology, General												
Public Health												
Recreation												
Sociology												
Speech												
Survey of Science												
Tests & Measurement in Phys. Ed.												

PHYSICAL THERAPY COURSE	19 to 19			19 to 19		
	Sem. I	Sem. II	Hours	Sem. I	Sem. II	Hours
Anatomy						
Advanced Anatomy						
Clinical Practice						
Electrotherapy and Radiation Therapy						
Ethics & Administration						
History of Physical Therapy						
Hydrotherapy						
Laboratory Practice						
Medicine						
Neurology						
Orthopedics						
Pathology						
Physical Therapy Seminar						
Physicsrelated to Phys. Therapy						
Psychiatry						
Relaxation						
Surgery						
Therapeutic Exercise						
ELECTIVES:						

ACTIVITIES			19 to 19			19 to 19			19 to 19			19 to 19		
			Sem. I	Sem. II	Hours	Sem. I	Sem. II	Hours	Sem. I	Sem. II	Hours	Sem. I	Sem. II	Hours
Badminton		T P												
Basketball		T P												
Body Mechanics		T P												
Bowling		T P												
Ballroom	Dancing	T P												
Folk		T P												
Modern		T P												
Tap		T P												
Fencing		T P												
Field Hockey		T P												
Figure Skating		T P												
Games		T P												
Golf		T P												
Apparatus	Gym-nastics	T P												
Exercises		T P												
Lacrosse		T P												
Posture		T P												
Posture Teaching		T P												
Relaxation		T P												
Social Recreation		T P												
Stunts and Tumbling		T P												
Swimming		T P												
Tennis		T P												
		T P												
		T P												
		T P												

CAMP		19	19	19
Archery	T P			
Campcraft	T P			
Canoeing	T P			
Riding	T P			
Rowing	T P			
Sailing	T P			
Soccer-Speedball	T P			
Softball	T P			
Swimming	T P			
Tennis	T P			
Track	T P			

Recommendation (Physical Therapy)

Scholarship

Probation

Special Aptitude

Appearance

Adaptability

General Health

Reliability

Personality

Cooperation

Capacity for leadership

Judgment

Offices held

Board of Officials rating

Basketball, Local Renewed

National Renewed

Hockey, Local Renewed

National Renewed

Swimming, Renewed

Life Saving:

Date Senior certificate

Date Instructor's certificate Renewed

Extra Curricula Activities Music

Remunerative work

Teaching Record

College work after graduation, degree Matriculated

Matriculated

Married name

Date of marriage

Remarks

EXTRA-CURRICULAR ACTIVITIES RATING SHEET

100 Points

School Government President
Student Fellowship Chairman
Social Committee Chairman
"BB Shots" Editor
Yearbook Editor

80 Points

School Government Vice-Pres.
Dance Group President
Dormitory Chairman
A. A. President
Posture Group Chairman
Class President
Outing Club Chairman

70 Points

Team Captains

60 Points

Student Fellowship Vice-Pres.
Class Vice-President
A. A. Vice-President

50 Points

School Government Secretary
School Government Treasurer

40 Points

Class Social Chairman
A. A. Representative
Class Posture Representative
Commuter Chairman
Outing Club Secretary
Glee Club President
Physical Therapy Representative

35 Points

Class Song Leader

20 Points

A. A. Secretary
Class Secretary-Treasurer
Assistant Team Captain
School Song Leader

10 Points

Dance Group
Team Song Leader

5 Points

Glee Club
Outing Club
"BB Shots" Staff

SAMPLE OF INVENTORY SHEET FOR TEACHERS' RATING ON GUILFORD-MARTIN

TEMPERAMENT TRAITS

Trait	Low (1)	Average (3)	High (5)
S	shyness, tendency to withdraw from social situations, to be seclusive		sociability, tendency to seek social contacts-enjoy the company of others
T	inclined to meditative thinking, philosophizing, analyzing one's self and others		lack of introspectiveness--extrovertive orientation of the thinking process
D	chronically depressed feelings--including feelings of unworthiness and guilt		freedom from depression, a cheerful, optimistic disposition
C	strong emotional reactions and moods, fluctuations in mood, and a disposition toward flightiness and instability		stable emotional reactions and moods
R	inhibited disposition and over control of impulses		happy-go-lucky or carefree disposition, liveliness and impulsiveness
G	tendency to inertness and disinclination for motor activity		tendency to engage in vigorous overt action
A	social passiveness		social leadership
M	femininity		masculinity of emotions and temperament make-up
I	lack of confidence, underevaluation of one's self, and feelings of inadequacy and inferiority		self-confidence and a lack of inferiority feelings

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]
[illegible]			[illegible]

TEMPERAMENT TRAITS
(concluded)

Trait	Low (1)	Average (3)	High (5)
N	jumpiness, jitteriness, and a tendency to be easily distracted, irritated and annoyed		tendency to be calm, unruffled, and relaxed
O	a tendency to take everything personally and subjectively and to be hypersensitive		a tendency to view one's self and surroundings objectively and dispassionately
Co	an overcriticalness of people and things, and an intolerant attitude		willingness to accept things and people as they are
Ag	a belligerent domineering attitude and an overreadiness to fight over trifles		lack of quarrelsomeness and a lack of domineering qualities

Ratings can be 1, 2, 3, 4, or 5.

PERSONAL INFORMATION RECORD.

This record is a summary of important health information. The data is confidential and will be used to help you with, health, scholastic and adjustment problems. Please answer all questions.

Date:_____

Name in full:_____
(last name) (first) (Middle)

Present Class_____ School:_____

Present intended college major:_____

Present occupation:_____
(full or part time)

Sex___Female__Male___Age___Birthday____Height____Weight_____

Have you ever had any serious or prolonged illnesses?_____

Give details:_____

_____

Have you ever been injured?_____

Give details:_____

_____

Family History

Father: living___deceased___age___

diseases and any physical complaints_____

Mother: living___deceased___age____

diseases and any physical complaints_____

Brothers: no. living_____ages_____no. deceased_____

diseases and any physical complaints _____

Sisters: no. living_____ages_____no. deceased_____

diseases and any physical complaints_____

This record was originated by Mr. Arthur Littlefield and revised by Dr. John V. Gilmore and Dr. Herbert Harris

Please check in the appropriate column at right if you have experienced any of the following diseases or disturbances.

	frequently	at times	never		frequently	at times	never
1. Hayfever				24. Ulcerative Colitis			
2. Asthma				25. Walking in sleep			
3. Hives				26. Constipation			
4. Eczema				27. Diarrhea			
5. Excessive Pimples				28. Anemia			
6. Skin Rash				29. Underweight			
7. Peptic Ulcer				30. Overweight			
8. Mucous Colitis				31. Loss of appetite			
9. Hemorrhoids				32. Tiredness			
10. Rheumatic Fever				33. Upset stomach			
11. Chorea (St. Vitus Dance)				34. Vomiting or nausea			
12. Hypertension (high blood pressure)				35. Heart murmurs			
13. Epileptic seisures				36. Enlarged heart			
14. Cold (more than 2 per year)				37. Changes in heart rate and/or rhythm			
15. Sinus trouble				38. Unusual pulse changes			
16. Laryngitis				39. Bursts of extra heart beats			
17. Lumbago				40. Marked slowing of heart			
18. Sciatica				41. Breathlessness			
19. Migraine headache				42. Other breathing difficulties.			
20. Stammering and Stuttering				43. Tightness of Chest			
21. Amnesia				44. Sharp or constricting pains in chest			
22. Arthritis							
23. Neuralgia							

	frequently	at times	never
45. Stiffness (of hands feet, mouth muscles)			
46. Muscular spasms			
47. Trembling (of hands feet, mouth muscles			
48. Intense hunger			
49. Tingling sensations			
50. Headaches			
51. Light headedness			
52. Dizziness			
53. Fainting			
54. Loss of consciousness			
55. Daytime sleepiness			
56. Insomnia			
57. Leg Aches			
58. Bedwetting			
59. Eyestrain			
60. Inflammation of eyes			
61. Diminution of visual field			
62. Earaches			
63. Ringing of ear (s)			
64. Sensitivity to noises			
65. Fluctuating deafness			
66. Nose bleed			
67. Loss of smell			
68. Sore throats			
69. Difficulty of swallowing			

	frequently	at times	never
70. Halitosis			
71. Canker sores			
72. Cold sores			
73. Excessive or deficient salivation			
74. Sore tongue			
75. Loss of taste			
76. Painful teeth			
77. Aching jaws			
78. Low back pain			
79. Pains in stomach or abdomen			
80. Sacroiliac pain or strain			
81. Bladder or kidney trouble			
82. Variable temperature			
83. Tightness or cramps of lower throat			
84. Excessive sweating			
85. Chills			
86. Nervousness			
87. Sensitivity to light (eyes)			
88. Nightmares			
89. Talking in sleep			
90. Inability to relax			
91. Menstrual difficulties			
92.			
93.			

PERSONAL INFORMATION RECORD

Items and Weights Given

5 Points

Amnesia
Asthma
Inability to relax
Insomnia
Migraine headaches
Mucous colitis
Nervousness
Nightmares
Peptic ulcers
Talking in sleep
Trembling (of hands, feet, mouth muscles)
Ulcerated colitis
Walking in sleep

4 Points

Bedwetting
Constipation
Diarrhea
Difficulty of swallowing
Dizziness
Eczema
Excessive sweating
Fainting spells
Headaches
Intense hunger
Menstrual difficulties
Pains in abdomen or stomach
Stammering and stuttering
Tightness of chest
Tiredness
Unusual pulse changes

3 Points

Arthritis
Bursts of extra heart beats
Changes in heart rate and/or rhythm
Colds
Daytime sleepiness
Fluctuating deafness
Halitosis
Hypertension
Light headedness
Loss of appetite
Low back pains
Lumbago
Marked slowing of heart
Overweight
Sciatic pain or strain
Sensitivity to light (eyes)
Sensitivity to noises
Sharp or constricting pains in chest
Sinus trouble
Stiffness (of hands, feet mouth muscles)
Tightness or cramps of lower throat
Underweight
Upset stomach
Variable temperature
Vomiting or nausea

PERSONAL INFORMATION RECORD (concluded)

2 Points

Aching jaws
Anemia
Bladder and kidney trouble
Chills
Epileptic seizures
Excessive or deficient salivation
Excessive pimples
Eyestrain
Hayfever
Hemmorhoids
Tingling sensations
Hives
Leg aches
Laryngitis
Loss of consciousness
Muscle spasm
Neuralgia
Painful teeth
Ringing of ear(s)
Skin rash
Sore throats
Sore tongue

1 Point

Canker sores
Chorea
Cold sores
Earaches
Enlarged heart
Heart murmurs
Inflammation of eyes
Loss of smell
Loss of taste
Nose bleed
Rheumatic fever
Sciatica

APPENDIX B

GENERAL PURPOSE TABLE

APPENDIX B

Freshmen	Previous Records: High School Grades	Previous Records: SAT Verbal	Bouvé-Boston Record: Grades: Theory	Bouvé-Boston Record: Grades: Practice	Bouvé-Boston Record: Extra-Curricular Activities	GUILFORD-MARTIN FACTORS-- S	T	D	C	R	G	A	M	I
1.	-	-	B	B	5	6	3	5	4	6	4	4	2	4
2.	-	-	A-	B/	25	4	3	5	4	4	3	4	6	4
3.	C	381	C-	C-	20	7	8	9	7	6	4	4	2	3
4.	B	331	B	B	15	4	6	4	4	6	6	1	6	2
5.	C-	512	B	B/	5	6	5	9	7	4	6	5	5	8
6.	C	380	C	C	5	7	4	5	4	9	9	6	5	3
7.	B-	385	C	C-	10	6	6	6	5	8	7	5	5	7
8.	B	329	B	B/	15	6	4	5	4	7	7	4	6	5
9.	B-	440	B-	B-	20	9	7	7	7	9	8	9	2	7
10.	B	470	C/	B	5	6	5	6	6	6	3	5	4	6
11.	C/	305	C	B-	10	7	6	7	5	9	6	5	4	6
12.	B	482	B	B-	75	8	5	8	5	9	7	8	4	7
13.	C-	438	C/	B-	5	6	7	8	8	3	1	3	6	5
14.	C	429	A-	B/	5	5	5	5	5	7	5	3	5	4
15.	B-	375	B-	B	5	7	6	8	8	8	6	9	4	9
16.	C	313	C/	B-	5	6	5	5	5	9	7	6	6	8
17.	B	527	B/	B-	5	1	4	5	6	1	0	3	6	6
18.	B-	375	B	B	85	7	3	4	5	5	7	5	6	6
19.	B	420	B/	B/	10	2	3	3	4	2	6	0	2	3
20.	C/	320	C	C/	5	7	8	8	9	4	3	4	4	5
21.	B	533	B/	B	10	7	5	8	7	8	7	7	6	7
22.	B/	424	B/	B/	25	2	4	4	6	0	0	2	4	5
23.	A-	445	B/	B/	55	7	3	6	6	4	5	6	4	6
24.	C	418	B/	B/	40	7	6	5	2	8	7	6	5	4
25.	B	386	C/	B	5	4	3	3	4	4	7	7	4	6
26.	B-	301	C	B/	5	7	5	7	6	7	6	7	3	7
27.	B-	502	B/	C-	5	3	5	3	3	4	5	4	4	3
28.	C	-	B/	B	5	4	2	2	1	5	5	2	3	2
29.	B	452	B	B/	15	4	7	5	5	6	4	5	8	3
30.	B-	499	A-	B/	30	5	5	4	4	6	5	4	4	4
31.	B/	484	A-	B/	30	6	2	5	5	5	4	7	4	7
32.	C	338-	B-	C/	10	9	3	6	6	7	6	7	7	8
33.	C/	-	B	B	5	4	6	4	4	4	5	2	4	2
34.	B/	526	A-	B/	5	2	4	5	6	2	4	2	4	2
35.	B	341	B/	B/	50	5	6	6	4	7	4	4	3	5

Freshmen	Students' Ratings on Themselves: N	O	Ag	C	Average of Teachers' Ratings on Guilford-Martin: S	T	D	C	R	G	A	M	I	N	O	Ag	Co	Personal Information Record: F	A	Total
1.	4	3	5	3	2.2	2.6	3.4	4.2	2.6	2.8	2.4	3	3	4	3.4	4.4	4	3	52	58
2.	5	4	7	6	3.4	2.6	3.4	3.4	3.2	3.4	3.2	4.2	3.6	3.6	3.8	3.6	3.8	21	95	137
3.	3	4	3	2	2	3	3	3	3	2.4	1.6	2.8	2.4	2.8	2.8	3.6	3.2	15	55	85
4.	5	3	4	3	2.6	3	3	2.6	3	3.2	3	3	3.2	3.4	3.2	3.2	3	25	59	109
5.	6	8	8	9	4.2	2.8	3.6	4.4	3	4	3.6	3	4	4.2	4	4.2	4	0	91	91
6.	3	5	2	3	3.4	3.6	3.8	1.8	4	3.4	2.8	2.2	3.2	2.6	2.8	3.2	3	20	66	116
7.	5	6	6	4	4	3.8	3.6	2.6	4	4.4	3.8	3	2.4	2.2	2.8	3.6	3.2	0	80	80
8.	5	5	8	3	3.8	3.2	4.2	4.2	3.6	4.4	4	3.8	3.6	3.8	4	3.8	4	0	40	40
9.	5	5	5	7	3	3.2	3.2	3.6	3.2	2.6	2.6	3	2.8	3.6	3.2	3.6	3.2	3	98	104
10.	5	7	6	7	2.6	2.4	3.2	3.8	3.4	3.6	2.8	3.8	2.8	3.6	3.8	3.6	4	0	37	37
11.	5	7	4	5	2	2.6	2.8	2.6	2.6	2.2	2.4	3	2.2	3.2	2.8	3.4	2.8	2	43	47
12.	7	5	4	6	3.6	3.2	3.4	1.8	3.4	2.4	3	1.8	3.2	2.6	2.6	2.8	2.4	0	64	64
13.	6	5	7	5	3.6	3.4	4	3.6	3.8	3.2	3	3	3.2	3.8	3.8	3.4	3.8	4	99	107
14.	6	3	6	5	4	3.6	4.2	3.6	3.6	3.8	3.8	2.2	4.4	3.6	4	2.8	3	4	54	62
15.	6	6	5	4	3.6	3.2	3.6	3	3.2	3.2	2.8	3	3.4	3.2	3.2	3.4	3.2	0	40	40
16.	4	5	6	6	2.8	3	3.2	3.4	3	3.2	2.8	3	3	3.4	3.6	3.6	3.4	12	86	110
17.	5	6	7	8	2.2	2.6	3.2	3.2	2.6	2.2	1.8	2.4	2.2	3.8	3	3.8	3.6	0	93	93
18.	5	3	4	3	4.4	3.2	3	2.4	4	4	4.4	3.6	3.8	2.6	3	2.8	3.2	13	78	104
19.	6	3	4	5	3.2	3.4	3.8	3.8	3.4	4	3.2	3.4	3.6	3.6	3.6	3.2	3.4	9	31	49
20.	6	6	7	5	3	3.4	3.4	2.8	3.4	3.4	3	2.8	3	3	2.8	3	3	0	60	60
21.	8	5	4	4	3	3	3.4	3.2	3.6	3.6	2.8	3.2	3	3.2	3	3.4	3.6	1	58	60
22.	4	4	6	6	2.2	2	2.4	2.6	2.2	2.8	2.6	2.6	1.8	3.2	2.6	4	3.2	8	67	83
23.	6	3	4	5	3.4	2.4	3.6	4	2.6	3.4	3.2	3.2	3.2	4	3.6	3.8	3.8	4	68	76
24.	5	4	4	3	4.2	4.4	4.2	3.2	4	4.6	4	3.8	3.6	2.8	3.4	3.2	3.2	3	53	59
25.	4	5	4	5	2.8	3	3.2	3	3	4	3	3.8	3	2.6	3	3.4	3.2	1	71	73
26.	6	7	6	6	3	3.4	3.6	2.8	3.2	3	3	2.6	2.8	3	3	3	3	0	38	38
27.	2	4	6	7	3.4	3	2.2	1	3	1.4	2.8	2	1.6	1.2	1.4	2.2	1.6	29	89	147
28.	2	2	5	3	3.6	2.6	3.4	4.6	3	2.8	4	3.4	3.6	4.6	4.4	3.8	4.6	17	76	110
29.	5	4	3	4	3.6	4.2	4	1.8	4.4	4.6	3.2	4.4	3.2	2.8	3.6	3.2	3.4	15	127	151
30.	4	3	4	5	3.2	2.8	3.4	3.8	2.8	4	3.8	2.2	3.4	3.8	3.4	3.6	3.6	3	68	74
31.	5	3	5	5	4	3.2	4.2	4	3.4	3.6	4	2.2	4	4	3.8	3.6	3.8	0	56	56
32.	8	7	8	9	2.2	2.8	2.8	3.4	2.8	2.8	2.4	2.4	2.4	3.6	3	3.8	3.4	3	56	62
33.	4	5	3	5	4	3.2	3.8	3.4	4	3.2	3.2	1.8	3.2	3.6	3.4	3.4	3.8	4	50	58
34.	6	4	4	5	1.2	1.8	2.2	2	1.8	3	1.6	2.8	1.4	2.6	1.8	3.6	2.4	3	32	38
35.	4	4	3	5	3	3.6	3.4	3.4	3.4	3.6	3.6	2	3.8	3.6	3.6	3.4	3	10	84	104

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APPENDIX B
(concluded)

Sophomores	Previous Records: High School Grades	Previous Records: SAT Verbal	Bouvé-Boston Record: Grades: Theory	Bouvé-Boston Record: Grades: Practice	Bouvé-Boston Record: Extra-Curricular Activities	GUILFORD--MARTIN FACTORS: S	T	D	C	R	G	A	M	I	Students' Ratings on Themselves: N	O	Ag	C	Average of Teachers' Ratings on Guilford-Martin: S	T	D	C	R	G	A	M	I	N	O	Ag	Co	Personal Information Record: F	A	Total
1.	C/	363	B	C/	50	5	8	8	8	4	2	4	4	6	5	7	8	4	3.6	2.2	3.8	2.8	3.4	4	3.2	2.6	2.8	2.8	2.6	3.4	3.6	4	51	59
2.	C/	469	B-	B/	70	8	3	5	6	5	5	7	5	7	4	6	6	7	3.4	2.8	1.8	1.2	2.6	3.2	2.8	3	3.6	2	1.6	1.4	1	14	106	134
3.	B	472	B-	C/	50	9	5	9	8	8	6	8	4	9	7	7	8	9	4	3.4	4.2	4.4	4	3.8	3.6	2.6	4.2	4.4	4.2	4.2	4.2	7	55	69
4.	C	360	B	B	45	4	7	6	6	6	4	4	4	6	5	4	6	5	3.4	3.6	3.4	2.6	3.8	4.6	3.8	3.4	2.8	2.8	2.6	3.6	3.6	0	84	84
5.	B-	465	A-	B/	20	3	5	4	5	4	8	3	6	3	3	3	6	5	3.6	3.8	4	3.4	4	4.6	3.6	3.6	3.6	3.4	4	3.8	4	12	71	95
6.	B-	499	B/	B-	5	2	4	3	5	3	3	3	6	3	5	3	8	8	2.2	2.4	2.4	2	2	3.4	2.6	3.6	2.4	2.2	2.6	3.4	2.6	6	82	94
7.	B/	568	B	C/	5	2	5	3	5	2	3	3	5	4	7	3	5	5	1.4	2.2	1.8	1.4	1.8	1.6	1.6	1.8	1.8	2	2	3.2	2.6	31	76	138
8.	C	432	B-	B-	25	6	2	3	1	6	6	6	6	4	5	4	5	4	2.2	2.6	2.4	1.8	2.4	3.8	1.8	4.4	2.4	2	2.2	1.8	2.6	4	43	51
9.	B-	-	C	C/	5	6	6	6	6	6	5	4	4	5	5	5	5	6	2.8	3	2.8	2.4	2.8	2.6	2.2	3.2	3	3	3	2.8	2.8	17	78	112
10.	C-	371	B/	B/	100	4	3	5	5	4	5	3	7	4	7	6	7	7	4	3.6	4.2	3	3.6	4.2	3.6	2.4	4	2.8	3	2.8	3	2	94	98
11.	C	467	B	B-	10	7	4	5	4	8	6	7	3	6	4	5	8	8	4.2	4.2	3.6	2.4	4.2	3	3.6	2.6	4	2.8	2.8	3	3	12	62	86
12.	C	479	C/	C/	20	5	7	8	9	4	6	6	8	6	8	6	3	4	3	3.4	3.6	3.8	3.4	3.6	2.8	3.6	3	4.2	3.8	4.4	2.6	2	38	42
13.	C/	373	B-	B/	5	4	6	5	5	3	5	4	4	5	6	4	7	6	2.2	2.8	2.8	3.2	2.4	3	1.8	2.8	2.2	3.4	3	3.8	3.6	8	77	93
14.	B	358	B	C/	5	6	4	3	4	5	2	7	4	4	4	5	6	8	3.4	3.6	3.6	3	3.8	1.8	2.6	3	3.4	3	3.4	2.4	1.8	37	79	153
15.	B	471	B	B-	5	4	3	2	2	4	4	4	3	1	4	4	4	6	3.2	2.8	3	3	3	2.6	2.4	2.2	3	3	2.8	3	3	19	73	111
16.	C	-	B	B	20	2	6	3	4	3	5	2	4	3	5	3	3	3	4	4	4.2	3.6	4	4.4	3.4	3.6	3.6	3.8	4.6	3.8	4.2	10	72	92
17.	B-	387	C	C/	10	6	2	5	5	5	6	4	3	6	5	3	6	7	2.8	2.6	3	3.2	2.6	3.2	2.6	2.4	3.4	3.2	2.8	4.4	3.8	3	87	93
18.	C	365	C/	B	10	7	5	6	5	7	6	7	7	4	5	7	1	3	3.4	3	3.2	3.2	3	3	2.8	1.4	3	4	3.2	4.4	3.4	6	56	68
19.	C-	280	C-	B	10	5	8	8	10	4	3	4	6	6	6	10	8	8	1.6	2.6	2.2	3	2	3	1.6	3.6	1.8	4	3.4	4.2	3.6	5	57	67
20.	C	401	C	C	5	1	7	4	3	6	2	2	4	2	4	4	7	5	1.6	2.8	2.6	3.2	2.4	1.4	1.4	3	2	3.6	2.8	3.6	3.4	12	108	132
21.	B-	380	C	B	55	6	4	5	5	6	4	6	5	6	5	7	7	5	2	1.4	2	1.2	2.2	3.2	1.4	4.4	2.6	2.8	2	2.6	2.6	13	99	125
22.	A-	496	A	B/	20	5	8	8	9	4	5	2	2	7	4	6	4	9	2.4	2.2	2.8	3.8	3	3.8	3.2	3.4	2.4	3.4	2.4	4.4	3.8	6	89	101
23.	C	363	C/	B-	30	4	4	5	5	5	4	5	6	4	6	6	3	5	3.6	3.8	4.2	3.2	4	3.8	3.2	3.8	2.6	3.6	3	3.8	3.6	13	99	125
24.	B	349	B	B	45	6	2	5	4	4	6	8	5	5	5	5	4	7	4.2	3.6	4.2	3	4	3.4	3.4	2.4	3.8	3.2	3.2	3.6	3.4	4	27	35
25.	B	272	B	B-	65	5	4	3	3	6	8	7	2	3	2	3	6	3	3.8	3.6	3.8	3.4	3.6	3.6	4.2	1.8	3.8	3.6	3.6	3.8	3.8	24	71	119
26.	B/	325	A-	B/	155	3	8	5	5	4	2	2	5	3	6	7	6	5	3.2	3.6	3.6	4	3	4	3.8	3.8	3.6	4.4	4	4.2	4.6	2	78	82
27.	C	345	B/	B	90	5	5	4	3	7	7	4	4	4	3	5	6	6	4.2	3.4	4.2	4	4	4	4.6	2.6	3.8	4	4	4.4	4.2	30	142	202
28.	B-	406	A-	B/	115	2	3	3	3	4	6	3	3	3	2	4	5	4	2.4	3.6	2.6	2.6	2.4	4	2.4	3	2	3.2	2.6	4	3.4	19	53	91
29.	B-	445	B	B	10	3	4	5	5	4	5	4	4	4	3	2	5	5	2.8	3	3	3	3.2	2.8	2.8	2	3	3.6	2.8	2.8	2	4	102	110
30.	B	455	A-	B	15	4	6	3	3	5	6	4	5	2	2	3	5	5	3.8	3	2.8	2	2.8	3	3.6	1.6	2.8	1.8	1.8	2.6	2.4	23	109	155
31.	B	355	B-	C	20	1	6	4	6	2	2	3	2	4	3	5	7	8	2	3	3.4	3	2.4	2.2	1.8	2.4	2.2	3.8	3	3.4	3.6	31	94	156
32.	-	506	B/	B/	20	6	6	8	9	2	2	1	3	5	7	7	4	10	2.6	2.2	3.2	4.4	3.2	4	2.8	2.8	3	4.2	4.2	4.8	4.2	0	84	84
33.	A-	414	B/	B	75	7	8	7	7	4	6	5	3	4	5	4	6	5	4	3.4	3.6	4	3.4	3.2	3.8	2.6	4	4	3.8	3.6	3.8	8	106	122
34.	C	343	B/	A-	60	4	9	8	8	5	3	3	6	7	8	7	7	9	2.8	3.2	3.6	4	3.2	4.2	3	2.4	3	4	3.6	4.6	4.8	4	56	64
35.	C	422	A-	A-	130	6	3	6	6	4	4	3	7	5	9	6	7	4	4.4	3.8	3.8	3.4	3.4	3.4	3.6	2.4	4.2	3.4	3.2	3.2	2.6	13	87	113
36.	A-	333	B/	B/	65	7	7	7	7	6	7	7	6	8	5	7	6	5	3.4	2.6	2.8	2.8	2	3.6	2.8	3	3.6	2.8	3.8	2.8	2.4	8	98	114
37.	A-	357	A-	A-	5	7	5	8	7	5	6	5	6	9	8	8	7	9	3	2.4	3.2	2.6	2.6	3.6	2.8	3.2	3.6	2.8	2.8	2.8	2.4	0	50	50
38.	C	410	B-	B	20	6	6	7	8	3	4	5	4	5	6	6	4	5	2.8	3	3	3.6	2.8	3.4	2.4	3.2	3	3.4	3.4	3.6	3.6	9	110	128
39.	B	528	A-	B/	50	2	5	6	8	1	1	0	4	3	4	7	8	6	3.6	2.4	3.8	3.8	3.4	4	3.4	3	3	3.8	4.2	4.6	4.4	17	105	139
40.	A-	538	A-	B-	5	7	2	3	3	6	4	7	2	4	4	3	4	5	3.4	3	3.4	3	3.2	2.8	2.6	1.6	2.8	3	3	3.4	3.2	13	75	101

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